

What is claimed is

1. A roll for roll forming, which has an axis coupling part for coupling with a rotation axis, and a circular sectional shape, and pressures and deforms a sheet of material passing between two rolls for roll forming, the roll comprising:

5 a plurality of pressure parts which are formed along the circumference of the circumference surface of the roll, are disposed with intervals in the width direction, and divide and pressure the sheet material passing by; and

10 a non-pressure part which is disposed between the pressure parts and is to not pressure partially the sheet material passing by, wherein the pressure parts and non-pressure part are disposed symmetrically on the left side and right side.

2. The roll of claim 1, wherein the non-pressure part is formed in the form of a groove, the non-contact length of the roll and the sheet material is less than 15 60% of the effective length of the roll, and equal to or more than 10% of the width of the sheet material.

3. The roll of claim 1, wherein the pressure part and the non-pressure part are formed alternately in the width direction.

20

4. A roll forming method by which while sheet material is sequentially passed between a plurality of convex rolls and a plurality of concave rolls, the sheet material is pressured so that the sectional shape of the sheet material is formed as desired, wherein the plurality of convex rolls are arranged with 25 intervals, and have convex circumference surfaces, and the curvatures of the convex rolls are sequentially diminishing, and the plurality of concave rolls are arranged neighboring the convex rolls to make respective roll pairs with corresponding convex rolls, and have concave circumference surfaces corresponding to the circumference surface of the convex rolls, respectively, the 30 roll forming method comprising:

dividing and disposing a pressure part for pressuring the sheet material passing by, and a groove-shaped non-pressure part for not pressuring the sheet

material passing by, on the circumference surface of the convex roll or the concave roll, so that the frequency of pressure applied to at least one part of the sheet material, which passes through the roll pairs, by the roll pairs is reduced in order to reduce work hardening of the at least one part of the sheet material.

5

5. The roll forming method of claim 4, wherein the pressure part formed on one roll pair is disposed so that the pressure part does not overlap the pressure part of another roll pair equal to or more than (the number of roll pairs - 2) times and by doing so, the frequency of pressure applied to each part of the sheet  
10 material passed through is less than the number of the roll pairs.

6. The roll forming method of claim 4, wherein the pressure part formed on one roll pair except the parts corresponding to both ends of the sheet material is disposed so that the pressure part overlaps the pressure part of another roll pair  
15 at a roughly identical frequency, and by doing so, the frequency of pressure applied to each part of the sheet material except both ends of the sheet material has a roughly identical distribution in the width direction of the sheet material.

7. A roll forming method by which while sheet material is sequentially passed between a plurality of convex rolls and a plurality of concave rolls, the sheet material is pressured so that the sectional shape of the sheet material is formed to a circle and parts of the sheet material facing each other are welded to produce a pipe, wherein the plurality of convex rolls are arranged with intervals, and have convex circumference surfaces, and the curvatures of the  
20 convex rolls are sequentially diminishing, and the plurality of concave rolls are arranged neighboring the convex rolls to make respective roll pairs with corresponding convex rolls, and have concave circumference surfaces corresponding to the circumference surface of the convex rolls, respectively, the  
25 convex rolls are sequentially diminishing, and the plurality of concave rolls are arranged neighboring the convex rolls to make respective roll pairs with corresponding convex rolls, and have concave circumference surfaces corresponding to the circumference surface of the convex rolls, respectively, the roll forming method comprising:

30 dividing and disposing a pressure part for pressuring the sheet material passing by, and a groove-shaped non-pressure part for not pressuring the sheet material passing by, on the circumference surface of the convex roll or the

concave roll, and by adjusting the frequency of pressure applied to each part of the sheet material by roll pairs formed with the convex rolls and the concave rolls, adjusting the degree of work hardening of each part of a finished pipe.

- 5        8.     The roll forming method of claim 7, wherein the pressure part formed on one roll pair is disposed so that the pressure part does not overlap the pressure part of another roll pair equal to or more than (the number of roll pairs - 2) times and by doing so, the frequency of pressure applied to each part of the sheet material passed through is less than the number of the roll pairs.

10

9.     The roll forming method of claim 7, wherein the pressure part formed on one roll pair except the parts corresponding to both ends of the sheet material is disposed so that the pressure part overlaps the pressure part of another roll pair at a roughly identical frequency, and by doing so, the frequency of pressure applied to each part of the sheet material except both ends of the sheet material has a roughly identical distribution in the width direction of the sheet material.

15

20